

Docket: D2551

WHAT IS CLAIMED IS:

1. A directional coupler system comprising:
an input diplex filter for splitting an input signal into a high band signal and a low band signal;
a high band directional coupler, wherein the high band signal is coupled to an input of said high band directional coupler;
a low band directional coupler, wherein the low band signal is coupled to an input of said low band directional coupler;
a tap diplex filter coupled to a tap of each of said high band directional coupler and said low band directional coupler; and
an output diplex filter for receiving and combining a high band signal output from said high band directional coupler and a low band signal output from said low band directional coupler.
2. The coupler system of Claim 1, wherein said high band directional coupler has a one octave bandwidth.
3. The coupler system of Claim 2, wherein the high band signal is operated from 1200-2400 MHz.
4. The coupler system of Claim 2 wherein said high band directional coupler is stripline or microstrip technology.

Docket: D2551

5. The coupler system of Claim 1 wherein said low band directional coupler is ferrite transformer technology.

6. The coupler system of Claim 1, wherein the low band signal is operated from 5-1000 MHz.

7. The coupler system of Claim 1, wherein each of said input diplex filter, said tap diplex filter and said output diplex filter are lumped component bandsplitting filters.

8. An improved wideband bandwidth directional coupler comprising:
a first directional coupler;
a second directional coupler, said first and second couplers arranged in a band splitting scheme;

first splitting means for splitting an input signal into a high band signal and a low band signal, wherein the high band signal is input to said first directional coupler and the low band signal is input to said second directional coupler;

second splitting means for receiving a high band signal output from said first directional coupler and a low band signal output from said second directional coupler;
and

a tap for receiving a signal from each of a tap port of said first directional coupler and said second directional coupler.

Docket: D2551

9. The coupler of Claim 8, wherein said first directional coupler has a one octave bandwidth.

10. The coupler system of Claim 9, wherein the high band signal is operated from 1200-2400 MHz.

11. The coupler system of Claim 9 wherein said first directional coupler is stripline or microstrip technology.

12. The coupler system of Claim 8 wherein said second directional coupler is ferrite transformer technology.

13. The coupler system of Claim 8, wherein the low band signal is operated from 5-1000 MHz.

14. The coupler system of Claim 8, wherein each of said first splitting means, second splitting means and tap are lumped component bandsplitting filters.

15. A method for improving the bandwidth of a coaxial cable transmission system by providing an improved bandwidth directional coupler that implements a high/low split filter, the method comprising the steps of:

splitting an input signal into a high band signal and a low band signal;

coupling the high band signal to the input of a high band directional coupler and the low band signal to the input of a low band directional coupler;

Docket: D2551

coupling a tap diplex filter to a tap of each of the high band directional coupler and the low band directional coupler; and

receiving and combining a high band signal output from the high band directional coupler and a low band signal output from the low band directional coupler.

16. The method of Claim 15, wherein the high band signal is operated from 1200-2400 MHz.

17. The method of Claim 15 wherein the high band directional coupler is stripline or microstrip technology.

18. The coupler system of Claim 15 wherein the low band directional coupler is ferrite transformer technology.

19. The method of Claim 15, wherein the low band signal is operated from 5-1000 MHz.